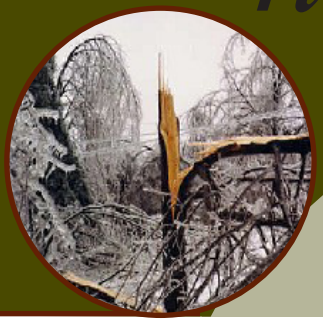
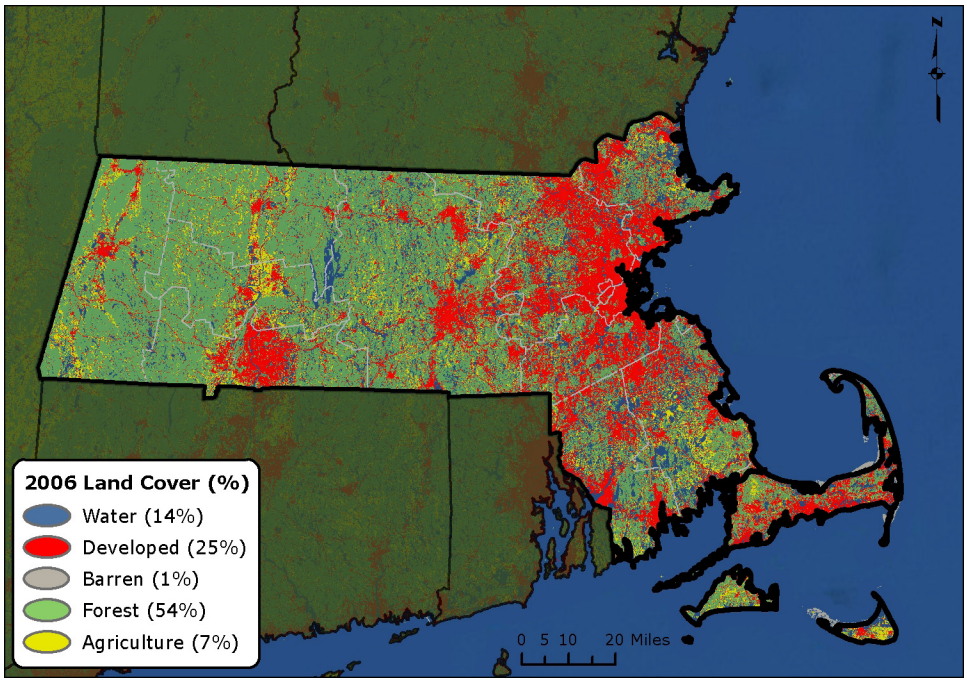
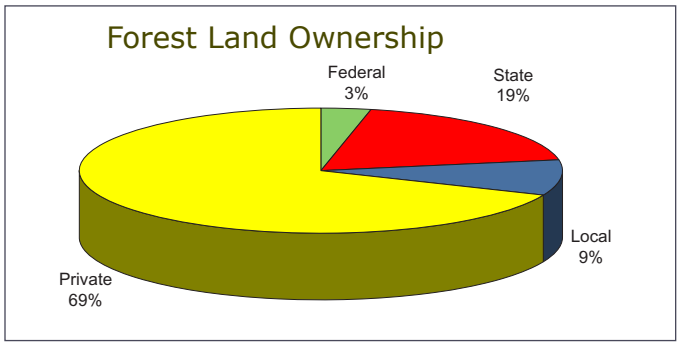
2011 Forest Health MASSACHUSETTS *highlights*



Forest Resource Summary

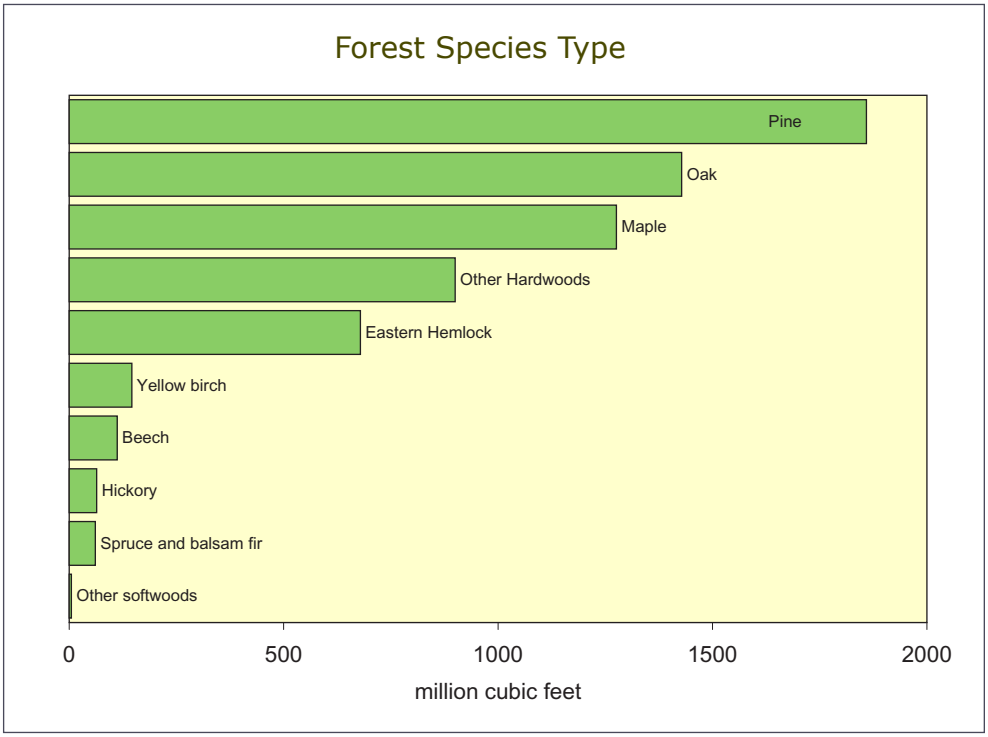
The forest resource of Massachusetts has great demands placed on it. Although Massachusetts is thought of as an urban State, about half of the land area is forested. This forested area is managed for a multitude of purposes, including recreation, water quality, wildlife habitat, and a forest product industry. About two-thirds of the forest lands in Massachusetts are privately owned—69 percent—with only 3 percent in Federal ownership. However, 28 percent is in State and local town ownership, which is quite unique in the region. The latest Massachusetts forest inventory estimates that there are approximately 3.2 million acres in the State that are forested. The forest resource is made up of a variety of forest types, mostly pine, oak, maples, other hardwoods, and eastern hemlock.





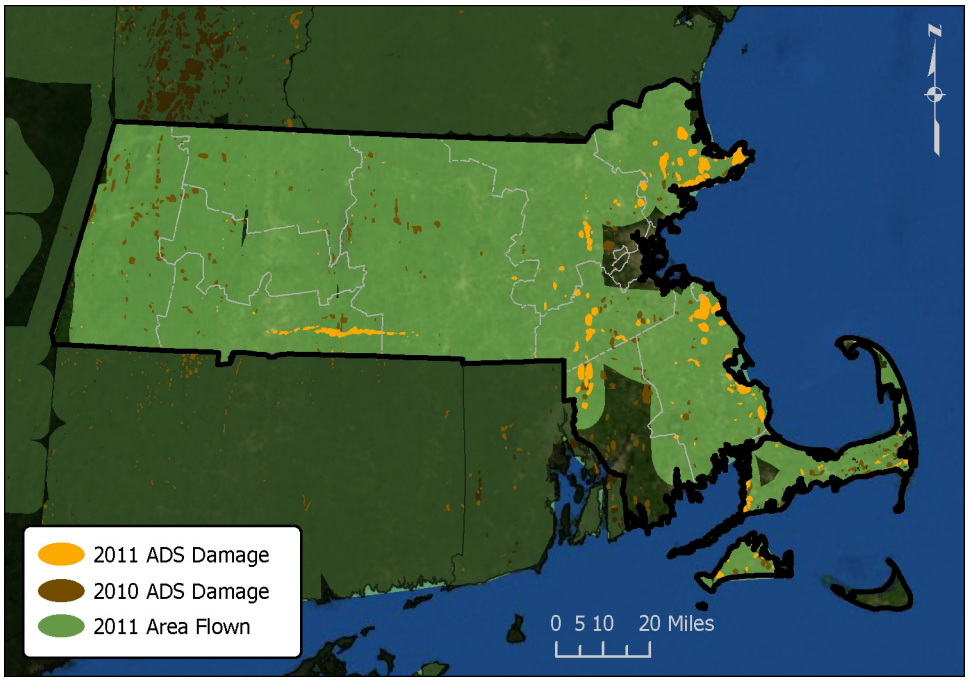
Forest Health Programs in the Northeast

State forestry agencies work in partnership with the U.S. Forest Service to monitor forest conditions and trends in their State and respond to pest outbreaks to protect the forest resource.



Aerial Surveys

During the 2011 aerial survey, 102,980 acres of defoliation or mortality were documented statewide. This included about 89,000 acres of winter moth defoliation, 540 acres of red pine scale mortality, and 540 acres of Diplodia canker. There were also over 11,000 acres of significant tornado damage that occurred along a path from Springfield to Sturbridge.



This map delineates aerial detection survey (ADS) results for Massachusetts in 2011 and 2010.

Forest Health Surveys

Massachusetts Department of Conservation and Recreation (DCR) Forest Health Program staff deployed 713 purple panel traps to monitor **emerald ash borer** in the four western Massachusetts counties in a 2-mile grid pattern (figure 1). This invasive pest is known to occur in eastern New York State, not far from the Massachusetts border. Traps were also concentrated in other high-risk areas, including private campgrounds and highway rest areas. In addition, 25 girdled white ash trees in 10 locations in western Massachusetts will provide another way to monitor this pest. Biosurveillance monitoring was continued by locating areas that had the predatory wasp *Cerceris fumipennis* to help determine if the emerald ash borer was present in the State. All survey results have been negative.

The annual **gypsy moth** survey was conducted in pre-established plots statewide to monitor future population trends. Worcester County plots had an increase in gypsy moth egg masses, which indicates that defoliation may occur in 2012.

The Massachusetts DCR helped personnel from the University of Massachusetts entomology program monitor **winter moth** populations in the spring of 2011 (figure 2). Winter moth is an introduced defoliating insect. Monitoring was used to determine where to release the predatory fly *Cyzenis albicans* in an attempt to control winter moth populations in the State.

The DCR Forest Health Program continues to be the lead State agency in the **Asian longhorned beetle** eradication efforts in the Worcester County and Boston infestations. This includes all survey activities in the affected areas. The quarantine area now encompasses 110 square miles. The State also continues to supply the USDA, APHIS Otis Method Lab with wood for rearing and researching the Asian longhorned beetle and emerald ash borer.

Figure 1.—Emerald ash borer trap placed in an ash tree.

Figure 2.—Winter moth larva.

Hardwood Defoliators

The winter moth defoliated a total of approximately 89,000 acres in the eastern part of the State and on the North and South Shores, Cape Cod, and Martha's Vineyard, (figure 3). Efforts by the U.S. Forest Service and the University of Massachusetts to control the **winter moth** using *Cyzenis albicans*, a biological control agent, are making slow but steady progress. This parasitic fly was found

at four previous release sites during the 2011 growing season.

Large populations of **oak lecanium scale** were detected on the South Shore, Cape Cod, and Martha's Vineyard. There was no noticeable defoliation from this insect, but continued high populations and previous winter moth defoliation could further stress oak trees in these areas.

Conifer Insects

The slow spread of **red pine scale** continues statewide (figure 4). Large areas of mortality are now being mapped aerially; 540 acres of mortality were documented this past growing season.

Hemlock woolly adelgid populations have decreased considerably due to the 2010-2011 cold winter temperatures. The State continues to monitor *Laricobius nigrinus*, a previously released biological control agent. Observers noted additional stress on hemlocks caused by the **elongate hemlock scale** statewide.

Forest Diseases

Diplodia tip blight was widespread in red pine stands statewide and caused defoliation. Rhizosphaera needle cast disease defoliated the lower canopy of blue spruce in western Massachusetts.

Anthracnose leaf disease was noticed statewide, primarily on sugar maple and white ash. This leaf disease caused premature leaf drop and muted fall foliage colors. In addition, **tar leaf spot** disease was seen statewide on Norway maple. Multiple **needle diseases** were evident during the 2011 growing season due to the cool, wet weather.

Abiotic Concerns

There were several extreme weather events during the 2011 growing season. A **tornado** on June 1 caused 12,000 acres of catastrophic tree mortality in central and western Massachusetts (figures 5a and b). The tornado created a 39-mile-long by half-mile wide swath of forest destruction through Hamden and Worcester Counties.

Tropical Storm Irene caused minimal tree damage; however, widespread flooding occurred. As a result, many trees and forested areas experienced large amounts of moisture, which in turn created the perfect conditions for leaf and needle diseases to be prevalent. In addition, salt spray from the tropical storm caused leaf browning and defoliation along the South Shore, Cape Cod, and the Islands (figure 6).

In late October, an early **Nor'easter snowstorm** caused widespread tree damage. Many urban forest areas received heavy wet snow on trees that still had leaves on them. A **heavy seed crop** was observed on many tree species this past growing season, including sugar maple, white ash, and birch. This in turn caused thinner than normal foliage in tree crowns.

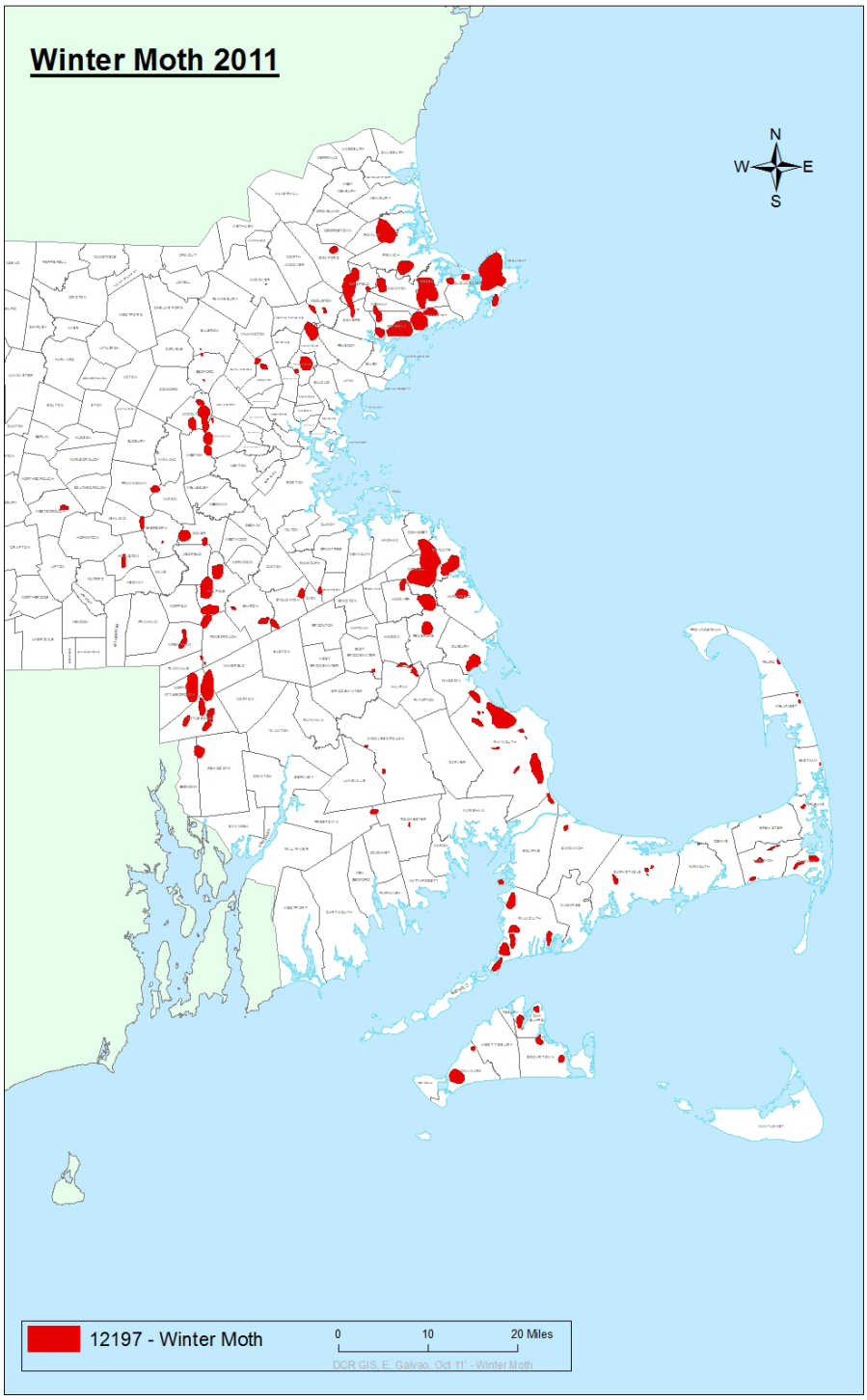


Figure 3.—Winter moth defoliation in eastern Massachusetts.

Figure 4.—Mortality of pine from the red pine scale and Diplodia canker.

Figure 5a—Swath of tornado damage.

Figure 5b—Broken and uprooted trees in a State campground.

Figure 6.—Salt spray from Tropical Storm Irene discolored foliage on coastal trees.

References

Land Cover Map:
U.S. Geological Survey. 2011. 2006 National land cover dataset. Sioux Falls, SD.

Forest Land Ownership, Forest Species Type:
U.S. Department of Agriculture, Forest Service. 2009. Forest resources of the United States, 2007. Gen. Tech. Rep. WO–78. Washington, DC. 336 p.

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